Defense Information Systems Agency

A Combat Support Agency

The 22nd Annual GCN Awards

InformationWeek
BUSINESS INNOVATION POWERED BY TECHNOLOGY
500 IT Innovators Award

Excellence.gov

Forge.mil
On Ramp to the DoD Cloud

SoftwareForge Document ID – doc16065

August 2011

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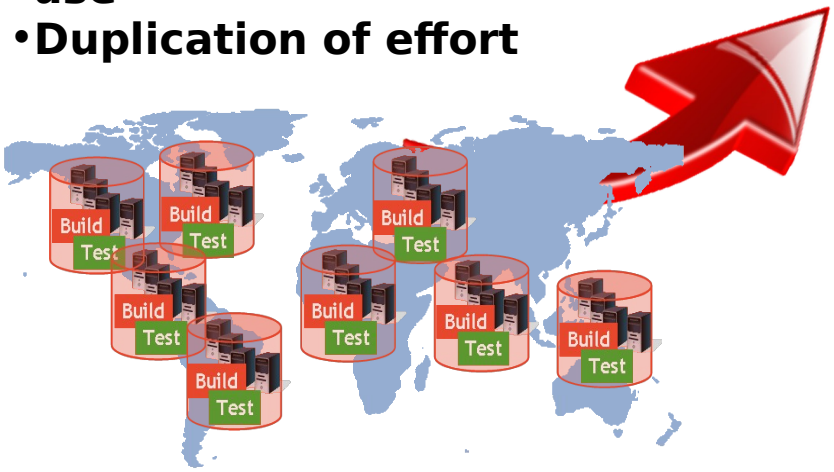
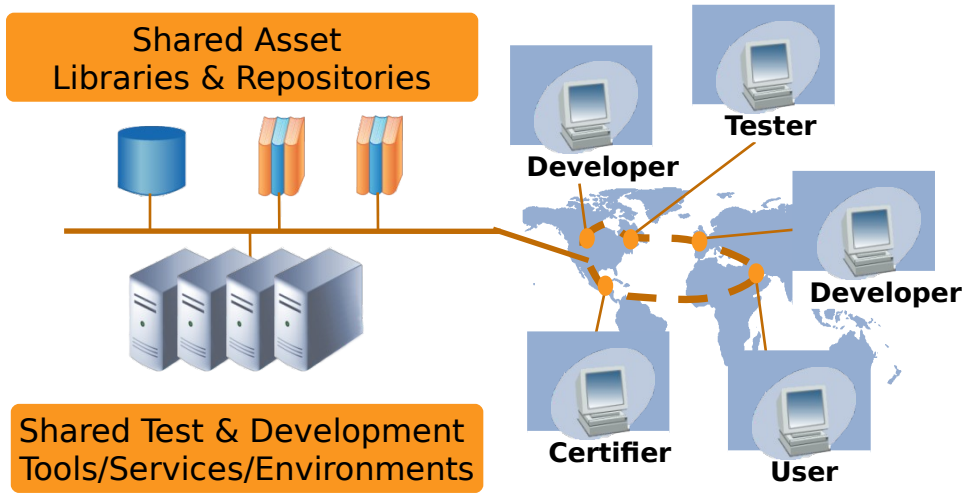
Forge.mil

Forge.mil

TODAY

- Siloed development environments
- Expensive and time consuming start-up
- Limited exposure, sharing, or re-use
- Duplication of effort





FORGE.mil

- Agile development and testing
- Cross-program sharing: software and services
- Early and continuous collaboration
- Integrated approach to development life cycle
- Extensible platform to support delivery of partner capabilities

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Policy and Guidance

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HR 2647, National Defense Authorization Act for Fiscal Year 2010, Sec. 804.

"The Secretary of Defense shall develop and implement a new acquisition process for information technology systems. The acquisition process developed and implemented pursuant to this subsection shall, to the extent determined appropriate by the Secretary —

. . . be based on the recommendations in chapter 6 of the March 2009 report of the Defense Science Board Task Force on Department of Defense Policies and Procedures for the Acquisition of Information Technology; and

. . . be designed to include —

- ***early and continual involvement of the user;***
- ***multiple, rapidly executed increments or releases of capability;***
- ***early, successive prototyping to support an evolutionary approach; and***
- ***a modular, open-systems approach***

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Forge.mil Vision

Forge.mil

Forge.mil Community – Stakeholders and SMEs

Developers

Users

Program Managers

Testers

Warfighters

SME

Collaborative Development/Test Environment

software Forge.mil

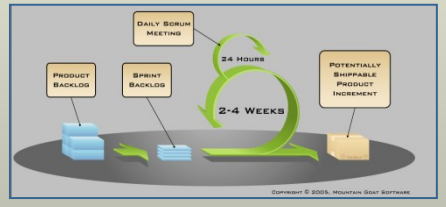
project Forge.mil

RACE

Cloud Computing Services

Improve DoD's ability to rapidly deliver dependable Software, Services and Systems

Process and Methods



Agile Software Development

Continuous Delivery

Tools and Resources

Continuous Integration

Forge.mil Community Shared Knowledge and Best Practices

enterprise eMASS Mission Assurance Support Service

Forge.mil Testing Services

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Forge.mil Family of Services

Forge.mil

Forge.mil Community

Collaborative content and knowledge management site for Forge.mil users to connect and share information

software Forge.mil

Free, collaborative development environment for open-source and DoD community source software

project Forge.mil

On-demand, fee-for-service, development environment for individual programs and projects

Benefits of the Forge.mil Community

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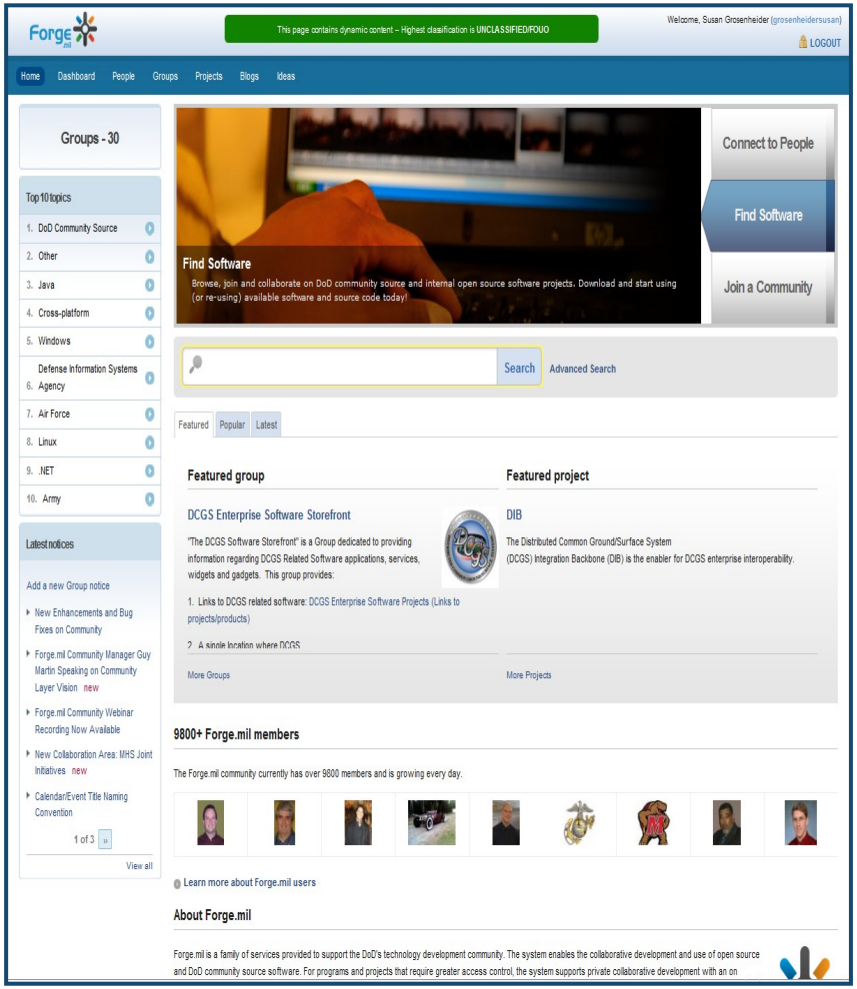
This page contains dynamic content – Highest classification is UNCLASSIFIED/FOUO
Welcome, Susan Grosenheider (grosenheidersusan)
LOGOUT
Home
Dashboard
People
Groups
Projects
Blogs
Ideas
Groups - 30
Top 10 topics
1. DoD Community Source
2. Other
3. Java
4. Cross-platform
5. Windows
6. Defense Information Systems Agency
7. Air Force
8. Linux
9. .NET
10. Army
Latest notices
Add a new Group notice
New Enhancements and Bug Fixes on Community
Forge.mil Community Manager Guy Martin Speaking on Community Layer Vision new
Forge.mil Community Webinar Recording Now Available
New Collaboration Area: MHS Joint Initiatives new
Calendar/Event Title Naming Convention
1 of 3
View all
Find Software
Browse, join and collaborate on DoD community source and internal open source software projects. Download and start using (or re-using) available software and source code today!
Connect to People
Find Software
Join a Community
Search
Advanced Search
Featured
Popular
Latest
Featured group
DCGS Enterprise Software Storefront
"The DCGS Software Storefront" is a Group dedicated to providing information regarding DCGS Related Software applications, services, widgets and gadgets. This group provides:
1. Links to DCGS related software: DCGS Enterprise Software Projects (Links to projects/products)
2. A single location where DCGS
More Groups
Featured project
DIB
The Distributed Common Ground/Surface System (DCGS) Integration Backbone (DIB) is the enabler for DCGS enterprise interoperability.
More Projects
9800+ Forge.mil members
The Forge.mil community currently has over 9800 members and is growing every day.
Learn more about Forge.mil users
About Forge.mil
Forge.mil is a family of services provided to support the DoD's technology development community. The system enables the collaborative development and use of open source and DoD community source software. For programs and projects that require greater access control, the system supports private collaborative development with an on

- Connect with other Forge.mil users
- Find Projects and Software for Reuse
- Discover and join sub-communities or Groups
- Improve Collaboration
- Expand the Discussions
- Share Ideas or find Ideas to act on
- Share Knowledge, Experience and Lessons Learned
- Cast a Wider Net to Find the Answer

Benefits of Forge.mil

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Reduce administrative costs, Increase productivity, Improve visibility

Developers

- Access a full featured development platform via the web or directly from your IDE
- Have fewer face-to-face meetings and less administration when collaboration is part of everyday development
- Link to continuous integration servers and provision build and test servers in the cloud whenever you need them

Managers

- Speed new project startup
- Secure access to project assets
- Enhance team productivity and collaboration
- Improve visibility into project status
- Reduce management and administrative overhead
- Access critical team assets via the web or your Microsoft Windows

Executives

- Consolidate and centralize to reduce administration, licensing, and infrastructure costs
- Establish governance and regulatory compliance
- Improve predictability of the development organization
- Integrate easily into existing systems to extend return on

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Forge.mil Benefits

ALM Acquisition and Operations Cost Savings

Forge.mil

Project Start-up and Development Tool Acquisition Cost Benefits

- Reduction in product evaluation, source selection and acquisition costs
- Reduction in internal solution implementation costs
- Reduction in IA approval costs
- Reduction in training expenses
- Hardware benefits to include hosting, hardware refresh costs and hardware maintenance costs
- Software benefits to include a single licensing model for globally distribute teams

Annual Development Environment O&M Cost Benefits

- Reduction in system administration costs (tasks performed by Forge team)
- Reduction in support costs (Forge provides Tier 1, 2 & 3 support)
- Reduction in upgrade and testing costs (Forge.mil deploys monthly drops of new features)
- Hardware & software maintenance cost is embedded into service cost

ROI Estimates

Project Application Lifecycle Management (ALM) Costs Estimates

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Project Size	Small	Medium	Large	Enterprise
ALM Acquisition and Operations Costs	**$18,750**	**$39,800**	**$466,500**	**$1,289,000**

Small: 1-15 Developers; Chooses free open source software (FOSS) to support their ALM needs; team has the organic skills to install, configure, operate and support their ALM solution; development work occurs at a single location.

Medium: 16-50 Developers, Mixture of FOSS and COTS components to support their ALM needs; the team provides organic support for ALM operations and support; centralized development facility

Large: 51-300 Developers: COTS ALM infrastructure with some FOSS components; outsourced support for ALM system installation, operations and support; distributed development environments

Enterprise: 301 - 2000 Developers: Installation, operations, on-going enhancement, and administration is outsource to an LSI; significant annual licensing and operations costs; operations distributed across different development locations and different development teams.

Note: Estimates based on the typical costs associated with project's acquisition and operation of ALM tools

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Forge.mil Benefits

Collaborative Development and Software Reuse

Forge.mil

- **Software Reuse**
  - SoftwareForge provides an open environment for the collaborative development and sharing of software across the DoD community
- **Collaborative Development**
  - Developing software for reuse can be much more expensive than developing a single use solution
  - Collaborative development off-sets these costs by allowing multiple developers to make ongoing contributions to an incrementally expanding set of functionality
  - Software may start as a single purpose solution then become incrementally enhanced by other developers
  - No single development activity bears the full cost for developing a reusable solution and each contributing developer benefits from the pre-existing capability
- **Forge.mil Collaborative Development & Reuse ROI**
  - An extensive study of the reuse of existing Forge.mil projects has not been performed, but case studies of two different Forge.mil projects show very compelling results

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Forge.mil Case Studies

Collaborative Development and Software Reuse

Forge.mil

- **DoD Bastille**
  - Provides DOD level secure, automated, and maintainable Linux system profiles, lock down and system images to the DoD utilizing various open source tools and kick start files

Contributing Developers	Software Updates	Downloads
110	25	400

  - Est
    - Use of DoD Bastille saves an average system administrator 1-2 weeks of effort to configure and secure a new Linux machine (estimate $8.4k savings/use)
    - Estimate each download is used at least three times
  - **ROI: $8.4k x (3x400) = $10.1M** and growing
- **Community CAC**
  - Provides support and software for the use and integration of CAC/PKI services to DoD systems

Contributing Developers	Software Updates	Downloads
157	100	18,500

  - Est
    - U
    - Productivity savings: 4 hrs/download user time saved by eliminating PKI access control issues
  - **ROI: 18,500 downloads x 5.5 hrs saved x $100/hr = $10.2M**

The Forge.mil Community

Forge.mil by the Numbers

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- **Connect with over 9,900 DoD developers, IT experts, and users sharing lessons learned, best practices, and solutions**
- **Participate in over 500 development efforts**
- **Collaborate in over 50 sub-communities**
- **Download over 3,400 software releases**
- **Contribute to over**
  - **57,000 software commits**
  - **51,000 downloads**
  - **4,000 discussion posts**
  - **15,000 documents**
  - **3,500 wiki pages**
  - **1,000 software repositories**

Forge.mil
Transforming the Way DoD Innovates IT
Forge.mil is a collaborative environment to accelerate the development and deployment of dependable software and services within the Department of Defense.
Browse over 400 projects & collaborate with over 7000 DoD members
COMMUNITY
FAQS
NEWS
RESOURCES
SUPPORT
Top 10 FAQs
What is the Forge.mil Program?
What is SoftwareForge?
What is ProjectForge?
What is the difference between SoftwareForge and ProjectForge?
What capabilities are available in the system?
What are the guidelines for participating?
How can I get access to Forge.mil (CAC users)?
How can I get access to Forge.mil (ECA Certificate users)?
How do I order a RACE Node?
Where do I go to download DoD/ECA Root and Intermediate Certificates?
More FAQs
About This Program
Forge.mil is a family of services provided to support the DoD's technology development community. The system enables the collaborative development and use of open source and DoD community source software. For programs and projects that require greater access control, the system supports private collaborative development with an on demand, fee for service offering. These initial software development capabilities are growing to support the full system life-cycle and enable continuous collaboration among all stakeholders including Project Managers, developers, testers, certifiers, operators, and users.
Tools & Resources
Forge.mil Brochure & ProjectForge Info Sheet
ECA Registration
PKI Information
Subversion Client Instructions
Download DoD Root & Intermediate Certificates
Download DoD Mozilla Firefox & Thunderbird Add-ons
Accessibility & Section 508 Information
Join Community
Latest News
Software.forge.mil and Project.forge.mil maintenance was successfully completed on 12/03/2010. For details, see SWF:page1980.
Open development delivers unexpected benefits
Forge.mil Project Director and Community Manager named in 2010 Federal 100 Winners
Forge.mil selected as 2010 Excellence.Gov Finalist
More News
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InformationWeek 500 2009
GCN Awards

Community Victories

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Joint Organizations
- Distributed Common Ground/Surface System (DCGS) Integration Backbone (DIB)
- National Senior Leader Decision Support Service (NSLDSS)
- Chemical, Biological, Radiological and Nuclear (CBRN) Software
- DoD Cloud Computing Strategy – collaborative development/implementation of DoD Strategy
- Community CAC – provides guidance and tools for using the Common Access Card

Army
- Apps 4 Army: Innovation challenge to develop new 'mashups' of Army data
- System of Systems Common Operating Environment (SOSCOE) – tactical middleware
- Tank and Automotive Research, Development and Engineering Center Software Engineering Center – Mine Resistant Ambush Protected Digital Backbone

Navy
- Naval Undersea Warfare Center (NUWC)
- Joint Explosive Ordnance Disposal Decision Support System (JEOD DSS)

Air Force
- Air and Space Operations Center Weapon System (AOC WS) Modernization
- Sensor Processing Architecture for Data Exploitation (SPADE)

Marine Corps
- Distributed Common Ground/Surface System – Marine Corps (DCGS-MC)
- Marine Air Ground Task Force Command and Control (MAGTF C2)

Barriers to Adoption

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What is keeping others away?

Forge.mil Common Myths

- *'Only DISA uses it'*
- *'Agile is wild, wild west'*
- *'Forge.mil doesn't integrate with fill in the blank'* OR *'Forge.mil doesn't do fill in the blank'*
  - Users have a voice – help us define new requirements
  - Stone Soup – bring your own tools, process and share
- Contractor angst – *'I lose control and revenue'*
- Government angst – *'How does using Forge help me with cost, schedule, performance and risk?'*

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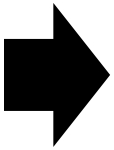
Agile Development

Why Agile? Why now?

Forge.mil

Modern software development demands a new, lean approach . . .

Conventional projects take too long and often miss the mark



Lean methods link developers and users to hit the mark quickly

"Demand exists for **a lightweight methodology** and **tools to support rapid, iterative development (agile development)** that still meets the organizations' needs. Application life cycle management (ALM) tools operate here, but many are old and cumbersome, which promotes room for new entrants. **The future could include tools that help end users define requirements better by collaborating.**"

Source: Gartner, January 2009

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Agile Characteristics

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Agile principles include:

- **Focus on Customer Value –** Align project, product and team visions to deliver better product quality – faster and cheaper.
- **Small Batches –** Create a flow of value to customers by "chunking" feature delivery into small increments.
- **Small, Integrated Teams –** Intense collaboration via face-to-face communication, collocation, etc; diversified roles on integrated, self-organizing, self-disciplined teams.
- **Small, Continuous Improvements –** Teams reflect, learn and adapt to change; work informs the plan.

Delivering Customer Value with Agile Project Management

The right product, at the right time, for the right price.

•Higher Quality: "Designed-to-fit" product with flexibility to change.

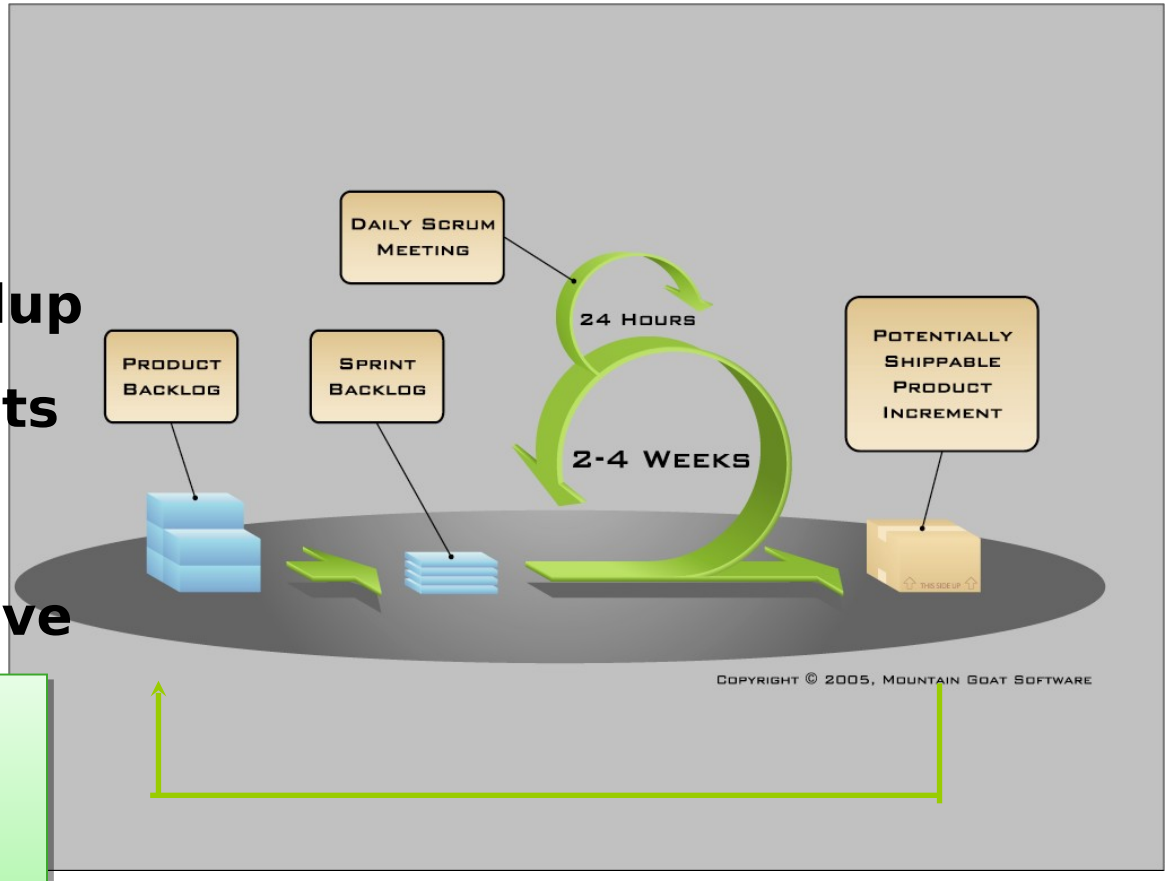
•Increased Throughput: Iterative and incremental project and product "chunks" with earlier value delivery.

•Reduced Waste: Lean, efficient processes with lower costs and higher productivity.

Agile Characteristics

The Process

- **Product Planning**
- **Release Planning**
- **Sprint Planning**
- **Daily Scrum/Standup**
- **Fixed-length sprints**
- **Sprint Review**
- **Sprint Retrospective**



Identify top-priority items and deliver them rapidly using:
- Small batches
- Small integrated teams
- Small, continuous improvements

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How Forge Supports Agile

Forge.mil

- Product Planning
- Release Planning
- Sprint Planning
- Daily Scrum/Standup
- Fixed-length sprints
- Sprint Review
- Sprint Retrospective

Identify top-priority items and deliver them rapidly using:
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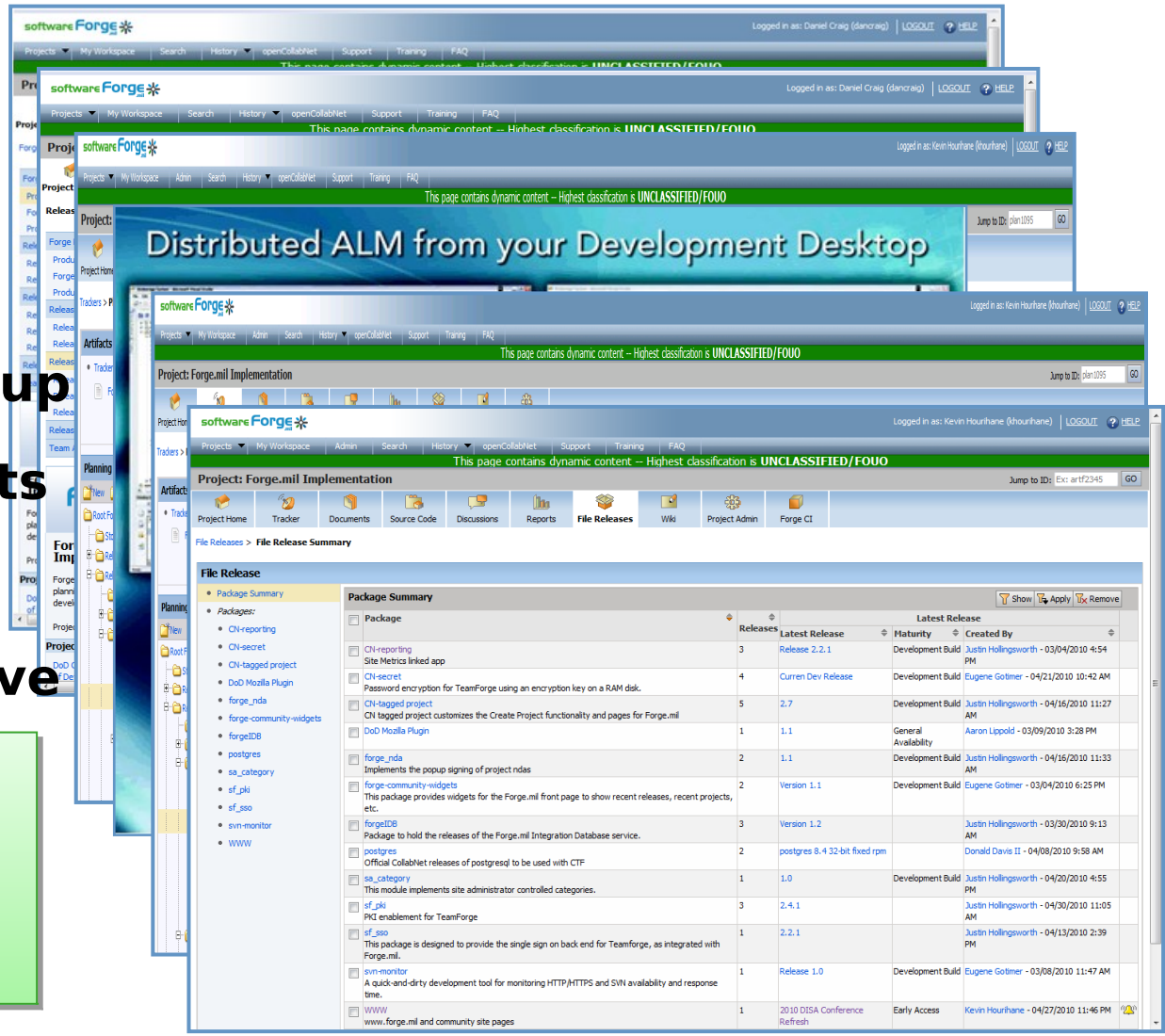

Cloud Computing

Forge.mil – RACE Environment

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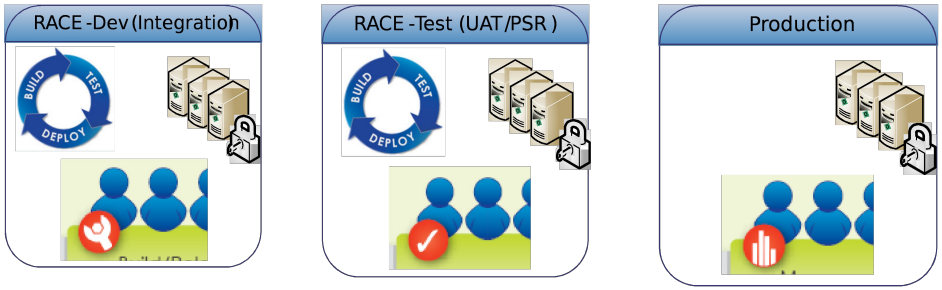
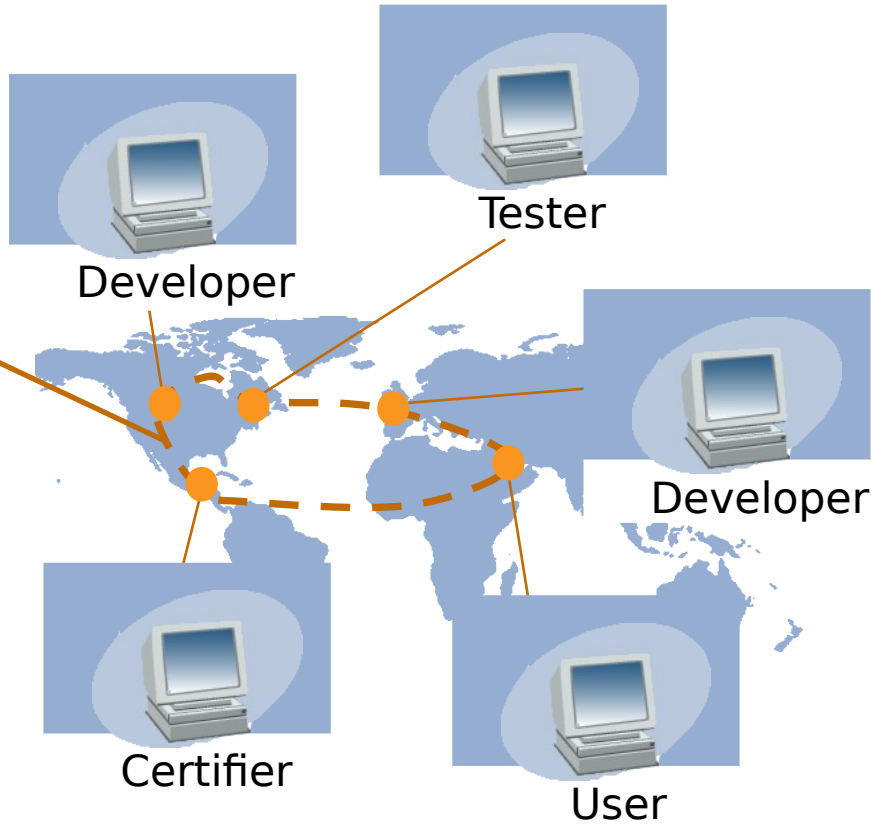
hared Asset Libraries and Repositori

Software Code Repositories

Profile Library

Build Library





est & Development Servic

Rapid Path to Production

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Continuous Integration
Environment

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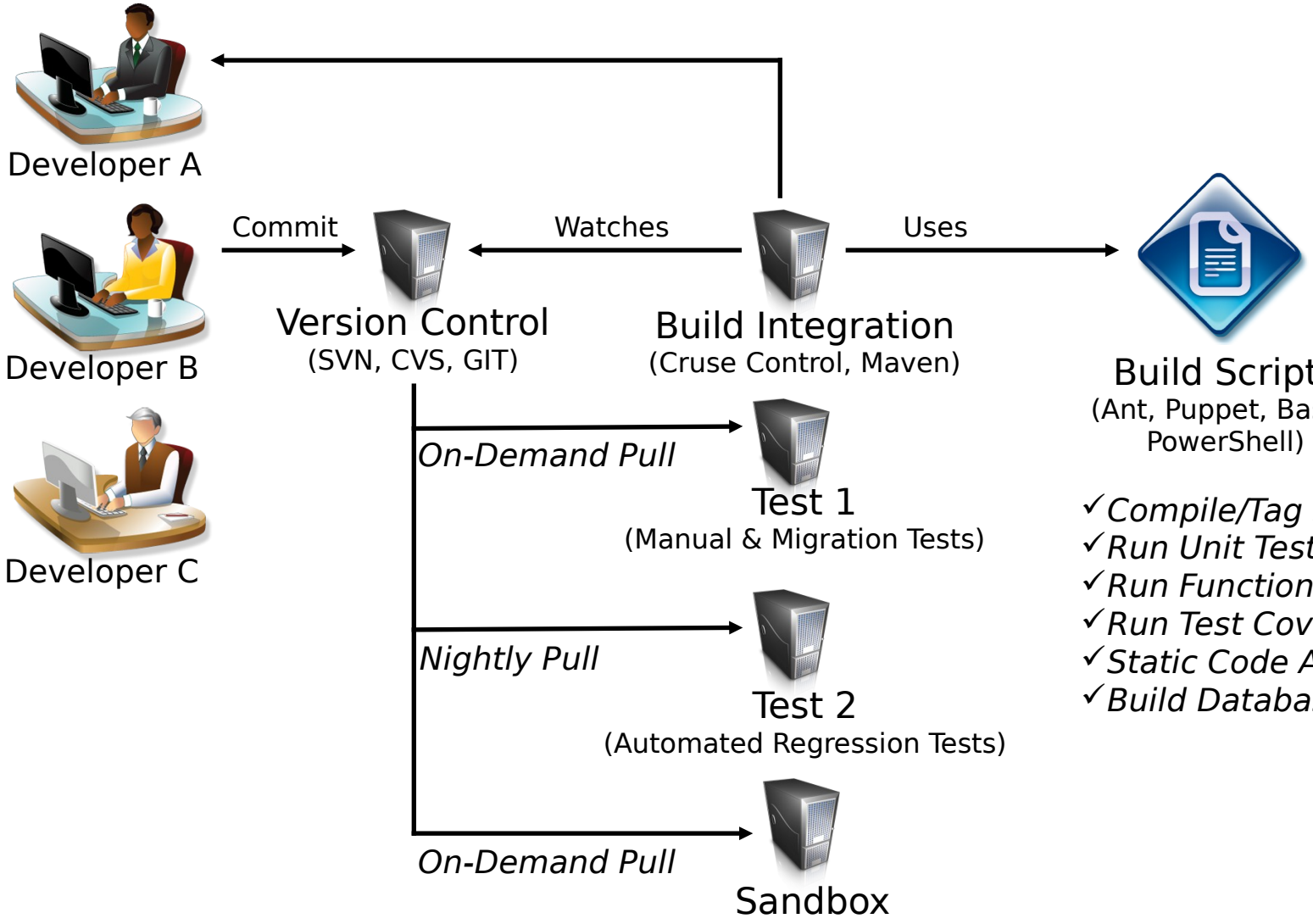

- ✓*Compile/Tag Source*
- ✓*Run Unit Tests*
- ✓*Run Functional Tests*
- ✓*Run Test Coverage*
- ✓*Static Code Analysis*
- ✓*Build Database*

Continuous Integration & Automated Testing

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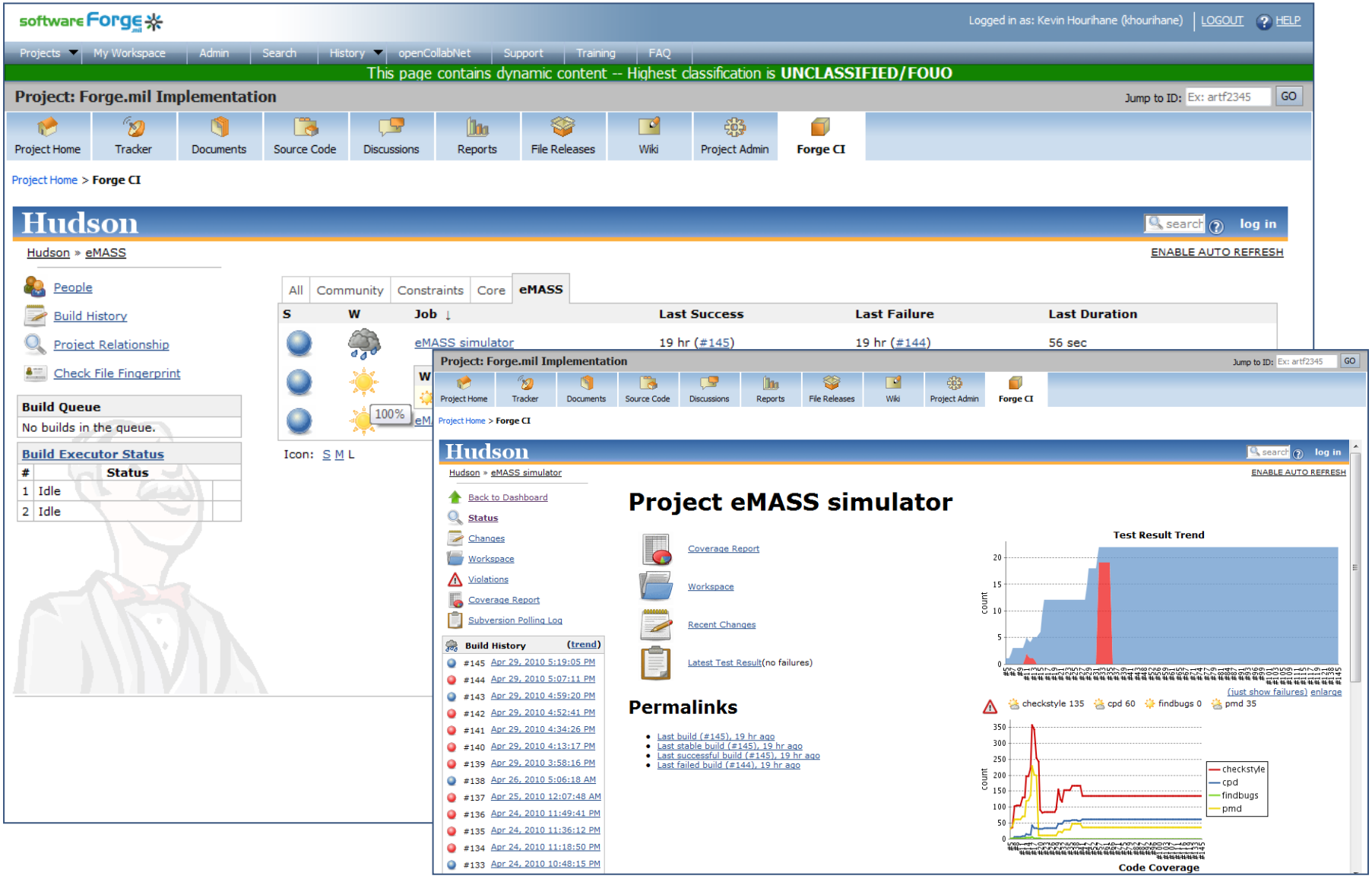
software Forge
Logged in as: Kevin Hourihane (khourihane) | LOGOUT | HELP
Projects | My Workspace | Admin | Search | History | openCollabNet | Support | Training | FAQ
This page contains dynamic content -- Highest classification is UNCLASSIFIED/FOUO
Project: Forge.mil Implementation
Jump to ID: Ex: artf2345 GO
Project Home | Tracker | Documents | Source Code | Discussions | Reports | File Releases | Wiki | Project Admin | Forge CI
Project Home > Forge CI
Hudson
search log in
Hudson » eMASS
ENABLE AUTO REFRESH
People
Build History
Project Relationship
Check File Fingerprint
Build Queue
No builds in the queue.
Build Executor Status
Status
1 Idle
2 Idle
All | Community | Constraints | Core | eMASS
S W Job ↓ Last Success Last Failure Last Duration
eMASS simulator 19 hr (#145) 19 hr (#144) 56 sec
100%
Icon: S M L
Project: Forge.mil Implementation
Jump to ID: Ex: artf2345 GO
Project Home | Tracker | Documents | Source Code | Discussions | Reports | File Releases | Wiki | Project Admin | Forge CI
Project Home > Forge CI
Hudson
search log in
Hudson » eMASS simulator
ENABLE AUTO REFRESH
Back to Dashboard
Status
Changes
Workspace
Violations
Coverage Report
Subversion Polling Log
Build History (trend)
#145 Apr 29, 2010 5:19:05 PM
#144 Apr 29, 2010 5:07:11 PM
#143 Apr 29, 2010 4:59:20 PM
#142 Apr 29, 2010 4:52:41 PM
#141 Apr 29, 2010 4:34:26 PM
#140 Apr 29, 2010 4:13:17 PM
#139 Apr 29, 2010 3:58:16 PM
#138 Apr 26, 2010 5:06:18 AM
#137 Apr 25, 2010 12:07:48 AM
#136 Apr 24, 2010 11:49:41 PM
#135 Apr 24, 2010 11:36:12 PM
#134 Apr 24, 2010 11:18:50 PM
#133 Apr 24, 2010 10:48:15 PM
Project eMASS simulator
Coverage Report
Workspace
Recent Changes
Latest Test Result (no failures)
Permalinks
Last build (#145), 19 hr ago
Last stable build (#145), 19 hr ago
Last successful build (#145), 19 hr ago
Last failed build (#144), 19 hr ago
Test Result Trend
count
(just show failures) enlarge
checkstyle 135 cpd 60 findbugs 0 pmd 35
checkstyle
cpd
findbugs
pmd
Code Coverage

Using Forge and RACE for Continuous Integration

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Developer

Identify tasks

Commit changes

Monitor status

Forge.mil

Trackers

SCM Repository

File Releases

Watch for source code changes

Download source code

Report status

Post release

RACE

Rapid Access Computing Environment

FAST. SECURE. FLEXIBLE.

Continuous Integration
(Hudson)

Dev/Test Server

Build
Package
Test
Deploy

eMASS Integration
Certification and Accreditation on Forge.mil Projects

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software Forge
Logged in as: Robert Vietmeyer (Vietmeyer) | LOGOUT | HELP
Projects | My Workspace | Admin | Search | History | openCollabNet | Support | Training | FAQ
This page contains dynamic content -- Highest classification is UNCLASSIFIED/FOUO
Project: admin-support
Jump to ID: Ex: artf2345 GO
Project Home | Tracker | Documents | Tasks | Discussions | Reports | Wiki | Project Admin | Site Metrics | SSO Admin | C&A eMASS
Project Home > C&A eMASS
enterprise eMASS Mission Assurance Support Service
Welcome
Enterprise Mission Assurance Support Service, or eMASS, is a government owned, non-proprietary, set of integrated web services, which provides visibility and automation of IA Program Management processes.
eMASS enables IA managers and senior decision makers at all enterprise levels to comprehend the scope and state of IA activities within the enterprise.
Links and Resources
eMASS FAQ
DIACAP Knowledge Service
Tips and Training
eMASS Training
Questions
For eMASS-related questions, please email: OKC-DODOST@CSD.DISA.MIL
DIACAP Scorecard
JSYSTEM As of 03-Nov-2009
Accreditation Status: ATO
Annual Security Review: Yes
Contingency Plan: N/A
Certification Date: 10-SEP-2009
Accreditation Date: 10-SEP-2009
Auth Termination Date: 10-SEP-2009
Control Compliance Status
LEGEND
65% Completed
28% Non-Compliant
7% Not Applicable
Total:
POA&M Compliance Status
LEGEND
67% Completed
22% Risk Accepted
11% Ongoing
Total:

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Continuous Delivery

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Test.Forge.mil

Forge.mil

Provide access to all resources necessary…

Desktops & servers

Operating Systems & updates

Applications & code

Test cases

…to all parties involved…

Program Office

Developer

Tester

Community Member

… so they can support & perform rapid, repeatable, agile, on-demand testing of software systems…

…leveraging automation and virtualization to expand resources.

Virtual services

Virtual machines

Virtual users

How it Works

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Local Cloud

Private Cloud

Public Cloud

Web Collaboration Scenario

Virtualization

Provisioning

Platform as a Service

Service

Tools

Service

VMs

Servers

O/S

Apps

Configs

Test Assets

Scenarios/Appliances

Virtual Services

Devices

Source Code

Asset Library

Test.Forge.mil

Goals and Benefits:

- On-demand environments to support all levels of testing
- Shorten timelines, reduce cost for testing
- Push quality down to source of problems
- Test early, test often (every week, every day, every hour)
- Pull in all parties involved in development (not just developers)
- Act as a “Test Range” for IT Systems
- Incorporate best of breed COTS/GOTS test tools
- Transform “cloud” from buzz word to useful tool
- Reduce risk
- Work with common tool sets for testing, automation
- Share knowledge, techniques & technology across communities

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Contact Info

Forge.mil

Email us at community@forge.mil

Follow us on Twitter

Join the Forge.mil Group on milBook

Sign up for Forge.mil updates at http://www.disa.mil/forge/

Next Steps

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- **Get an account**
  - Navigate to https://community.forge.mil (requires a valid DoD CAC or ECA Certificate).
  - Your account is active once your email address is confirmed.
  - For info on how to obtain and install an ECA Certificate, see the FAQ – "How can I get access to Forge.mil" at https://www.forge.mil.
- **Join the Forge Community Support Group to –**
  - Review the Getting Started Guides
  - View Training, FAQs, and Support Documentation
  - Ask Questions and Submit Enhancement Requests
- **Find, connect and follow other members** – browse users under the People tab
- **Find and join a group** – search the Group Directory in Community
- **Find and join a project** – search the Project Directory in Community or 'All Projects' on SoftwareForge or ProjectForge
- **Visit the Forge.mil Community Home**
  - **Visit the featured group and project**
  - **View the most popular content –** What do other users think you should be reading?
- **Still have questions –** contact the Forge.mil Community Management Team at community@forge.mil

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Forge.mil Track Sessions

Forge.mil

Session	Description	Date/Time	Location
Forge 101 – An Introduction to Forge.mil (Daily Sessions)	Learn how to participate in a growing community of developers, program managers, testers, certifiers, end users and Warfighters and how to make the most of the current capabilities	TBD	TBD
		TBD	TBD
		TBD	TBD
Continuous Delivery: Maximize Velocity and Value! (Daily Sessions)	Hear about the key technologies and techniques utilized by the Forge.mil project team to achieve maximum delivery velocity and "satisfy the customer through early and continuous delivery of valuable software"	TBD	TBD
		TBD	TBD
		TBD	TBD
De-mystifying Agile Software Development.		TBD	TBD
Forge.mil Success Stories and Lessons Learned – Community Case Studies	During this track session, attendees can participate in a lively discussion with the Forge.mil leadership and current Forge.mil customers on how Forge.mil is transforming software development.	TBD	TBD
Forge.mil		TBD	TBD

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Forge.mil Breakout Sessions

Forge.mil

Session	Description	Date/Time	Location
Session 1	Agile Software Development – A Day in the Life of an Agile Development Team	TBD	TBD
Session 2	Forge.mil Power Users Information Exchange	TBD	TBD
Session 3	Technical Exchange – Continuous Integration	TBD	TBD
Session 4	Technical Exchange – Subversion Best Practices	TBD	TBD
Session 5	Technical Exchange – Forge.mil Testing Services	TBD	TBD

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